

Leptospirosis

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Zoonotic diseases can be passed between animals and humans. Among the most common is leptospirosis, which can be transmitted by livestock, pets and wildlife to humans and other animals.

The infecting organism is a question mark-shaped spirochete bacteria called *Leptospira interrogans sensu lato*. Of the 200-plus different strains (also called serovars or serotypes) within the species, only eight are of importance for dogs and cats. Depending on the animal's health, immunity and other factors, these strains can produce various levels and types of disease.

Canine Infection

Dogs become infected when mucous membranes (lining of mouth, nose, etc.) or scraped skin comes in contact with urine from an infected animal. Stagnant or slow-moving water is a good reservoir for the organism; incidents of infection typically increase during flooding. Leptospirosis can also be transmitted venereally, through the placenta, via bite wounds, or by ingestion of

infected tissue, food, or bedding.

Once the *Leptospira* bacteria enters the blood stream, the spirochetes travel quickly, usually to the kidneys. Rapid reproduction causes further inflammation and kidney failure. Liver failure can also occur, depending on the strain of leptospire involved. After infection the organisms may be shed in the urine for weeks or months.

Symptoms

Early symptoms in pets can include fever, depression, loss of appetite, nausea or vomiting, joint pain and muscle tenderness, and coughing. Symptoms may ultimately progress to include severe bleeding, jaundice, difficulty breathing, and increased thirst.

Similar symptoms also occur in humans. Cats, however, rarely show signs when infected.

The Centers for Disease Control and Prevention officials monitor leptospirosis cases in humans. Studies indicate approximately one-third of cases come from contact with infected dogs. Another third originate from contact with rats (usually field work).

Diagnosis

Leptospirosis in animals is frequently misdiagnosed as

THE FACTS

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- One-third of cases are linked to contact with infected dogs.

meningitis or hepatitis. A positive diagnosis can be made through blood tests or urine analysis.

A blood test (or titer) to identify antibodies to specific *Leptospira* serotypes can be performed. Diagnosis is confirmed by a 4-fold increase in antibodies revealed by a second blood test conducted two to four weeks after the first.

Test results may be very difficult to interpret, if a dog was vaccinated within the previous three months. A PCR (or DNA) test can be conducted to distinguish the vaccine from infection. However, this test method is not available to most laboratories.

A fresh urine sample may be submitted for testing, but leptospires are shed intermittently and most veterinary hospitals do not have the “dark field” microscopy necessary.

Treatment

A one-week (or longer) course of treatment consists of antibiotics,

controlling vomiting, replacing fluid, and alleviating any problems associated with the kidney or liver infections. Prognosis depends upon the extent of organ damage.

Contaminated areas in the home should be cleaned with an iodine-based disinfectant, while wearing gloves. This helps decrease transmission and infection rates.

Vaccination and Prevention

Leptospiral vaccine for dogs is usually included with the basic distemper vaccination. The killed vaccine protects against two common strains of leptospirosis, and is often blamed for the vaccine reactions seen in dogs. A new vaccine protects against two other serovars.

Vaccinations will reduce the disease’s severity, but will not prevent infected dogs from being carriers. Because of low infection rates, no vaccine is currently available for cats.